

***Himasthla catoptrophori* sp. n. (Trematoda: Echinostomatidae) from Willets, *Catoptrophorus semipalmatus* (Charadriiformes: Scolopacidae), from the Galveston, Texas Area**

NORMAN O. DRONEN,^{1,3} JANE E. BADLEY,¹ AND WILLIAM J. WARDLE²

¹ Laboratory of Parasitology, Department of Wildlife and Fisheries Sciences, Texas A&M University, College Station, Texas 77843 and

² Department of Marine Biology, Texas A&M University—Galveston, Galveston, Texas 77553

ABSTRACT: During a study of digeneans of shore birds from the Galveston, Texas, area of the Gulf of Mexico, 40% (39 of 99) of willets, *Catoptrophorus semipalmatus* (Charadriiformes), were found to be infected with an undescribed species of Echinostomatidae (19 per infected host), *Himasthla catoptrophori* sp. n. The new species can be distinguished from others in the genus by the 40 collar spines, 2 more than the maximum reported previously. The new species most closely resembles *H. californiensis* and *H. rhigedana*, but in addition to having 2 more collar spines, *H. catoptrophori* sp. n. has a smaller ratio of the transverse diameter of the oral sucker to the acetabulum (1:2.0–2.1, as compared to 1:2.8 and 1:2.6–3.0, respectively). It is also smaller than *H. californiensis*, 18 mm in length as compared to 8 mm.

KEY WORDS: *Catoptrophorus semipalmatus*, Echinostomatidae, *Himasthla catoptrophori* sp. n., Gulf of Mexico, Galveston, Texas.

Of the 24 species of *Himasthla* Dietz, 1909, currently recognized, 13 have been reported from the western hemisphere: *H. alincia* Dietz, 1909; *H. californiensis* (sensu latu *H. rhigedana* Adams and Martin, 1963) Deblock, 1966; *H. compacta* Stunkard, 1960; *H. elongata* (Mehlis, 1831) Dietz, 1909; *H. incisa* Linton, 1928; *H. leptosoma* (Creplin, 1829) Dietz, 1909; *H. littorinae* Stunkard, 1966; *H. mcintoshii* Stunkard, 1960; *H. muehlensi* Vogel, 1933; *H. piscicola* Stunkard, 1960; *H. quissetensis* (Miller and Northrup, 1926) Stunkard, 1938; *H. rhigedana* Dietz, 1909; and *H. tensa* Linton, 1940. Stunkard (1960) considered *H. tensa* to be synonymous with *H. elongata*; however, unlike *H. tensa*, the vitellaria of *H. elongata* extend anteriorly to the level of the posterior margin of the cirrus sac, suggesting that *H. elongata* is distinct from *H. tensa*.

During a study of intestinal helminths of shorebirds from the Texas gulf coast, specimens of an undescribed species of *Himasthla* with 40 collar spines were found in willets, *Catoptrophorus semipalmatus* (Gremlin, 1789). *Himasthla rhigedana* (Russell, 1960) and *H. quissetensis* (Bush, 1990) have been reported previously from willets.

Materials and Methods

Ninety-nine willets were collected from the Galveston area of the Gulf of Mexico (89 between December 1977 and November 1978; 8 in August 1992; 2 in August 1994) and were examined for intestinal helminths. Trematodes were relaxed in saline, fixed in AFA, stained in Semichon's carmine or fast green, and mounted in Kleermount® or Canada balsam. Some specimens were sectioned by conventional paraffin technique. Drawings were done with the aid of a drawing tube. Measurements are in micrometers, with the mean followed by the range, in parentheses, unless otherwise stated.

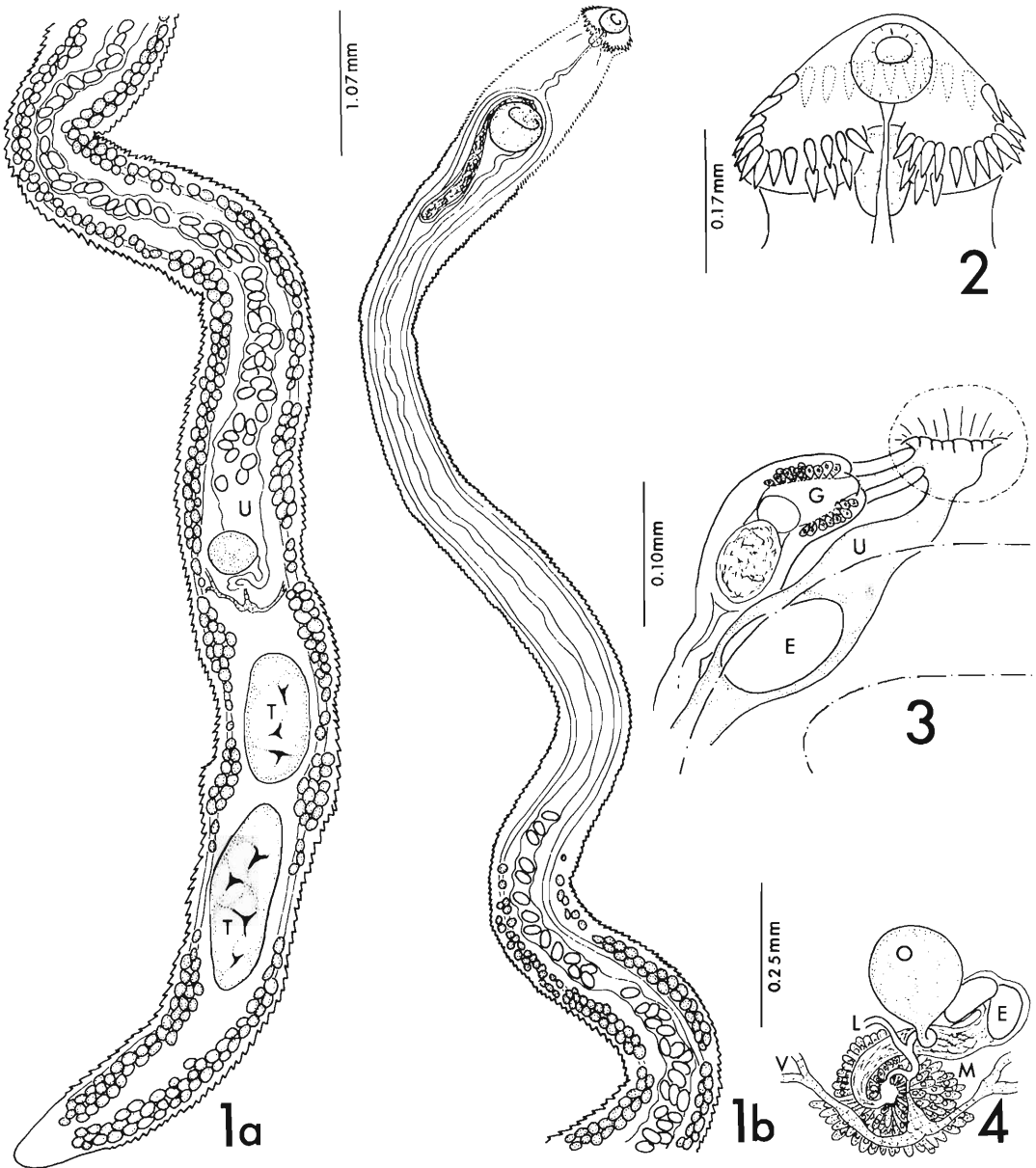
Results

Thirty-nine of 99 (40%) willets were infected with an undescribed species of *Himasthla*, with a mean intensity of 19 (3–21).

***Himasthla catoptrophori* sp. n. (Figs. 1–4)**

DESCRIPTION (based on 15 specimens): Echinostomatidae. Body with large spines 18 (9–32) mm long by 750 (373–980) wide, giving the tegument a serrated appearance. Forebody 805 (600–1,125) long, oral sucker 125 (100–155) long by 140 (110–165) wide with reniform collar bearing 40 spines 45 (40–50) long, arranged in a single continuous row of 34, with 3 additional corner spines in a separate row on each side. Acetabulum 284 (240–330) long by 280 (240–330) wide, located in upper 1/22 of body. Ratio of transverse diameter of oral sucker to

³ Corresponding author
(e-mail: n-dronen@tamu.edu).



Figures 1–4. *Himasthla catoptrophori* sp. n. 1. Ventral view of body; a. posterior half showing testes (T) and uterus (U), b. anterior half. 2. Head collar and spine arrangement. 3. Genital pore area showing an egg (E), male terminal genitalia (G), and uterus (U). 4. Ovary and ootype region showing an egg (E), Laurer's canal (L), Mehlis' glands and ootype (M), ovary (O), and vitelline ducts (V).

acetabulum, 1:2.0–2.1. Mouth subterminal, pre-parynx short; pharynx 120 (110–135) long by 80 (70–95) wide; esophagus 525 (360–740) long, bifurcating immediately anterior to acetabulum; ceca long, terminating near posterior extremity. Testes smooth, tandem, in posterior ex-

tremity; anterior testis 1,020 (570–1,500) long by 295 (230–350) wide; posterior testis 1,095 (690–1,490) long by 280 (235–345) wide. Seminal vesicle bipartite, enclosed in cirrus sac, 790 (510–1,050) long, overreaching acetabulum by approximately 3 times its length into the hind-

body. Genital pore on ventral surface, immediately preacetabular on midline of body. Ovary smooth, spherical, 205 (110–290) long by 230 (130–325) wide, located approximately the length of one of the testes anterior to the anterior testis. Oviduct arises from ovary posteriorly, ootype situated immediately posterior to ovary, Laurer's canal present. Vitellaria in lateral fields extending from approximately midbody to near posterior extremity, often interrupted in testicular regions. Uterus essentially preovarian, intercecal, initial portion usually filled with spermatozoa. Eggs 99 (90–115) long by 75 (60–92) wide.

TYPE HOST: *Catoptrophorus semipalmatus* (Gremlin, 1789). Specimens deposited in the Texas Cooperative Wildlife Collection, Texas A&M University, College Station, Texas 77843. Museum no. 10458.

TYPE LOCALITY: Galveston County, Texas, west bay area.

SITE OF INFECTION: Small intestine.

HOLOTYPE: U.S. National Parasite Collection (USNPC) 75300.

PARATYPES: USNPC 75301 and the University of Nebraska State Museum, HWML (2 specimens) 39467.

ETYMOLOGY: The species name refers to the genus of its host, *Catoptrophorus*.

Discussion

Himasthla catoptrophori sp. n. can be distinguished from other species in the genus by having 40 collar spines, 2 more than reported previously. Of the 13 species of *Himasthla* known to occur in the western hemisphere, only *H. alinca* (28–31 collar spines), *H. californiensis* (38), *H. leptosoma* (29), *H. mcintoshi* (35), *H. piscicola* (29), and *H. rhigedana* (34–38) are similar to *H. catoptrophori* n. sp. in having the

vitellaria commencing well behind the posterior margin of the cirrus sac. The new species resembles both *H. californiensis* described by Adams and Martin (1963) and *H. rhigedana* described by Dietz (1910), but in addition to having more collar spines, *H. catoptrophori* sp. n. differs from both of these species in having a smaller ratio of the transverse diameters of the oral sucker to acetabulum (1:2.0–2.1, as compared to 1:2.8 in *H. californiensis* and 1:2.6–3.0 in *H. rhigedana*) and an intermediate egg size (99 long, as compared to 112 in *H. californiensis* and 74–82 in *H. rhigedana*). It is also smaller than *H. californiensis* (18 mm long as compared to 8 mm).

Acknowledgments

We thank the Texas Parks and Wildlife Department, whose cooperation made this study possible, and Dr. J. R. Lichtenfels, for access to specimens of *Himasthla* spp. We also thank Trudy Belz, Texas City, and Dr. Jackie Cole, Galveston, for help in collecting willets.

Literature Cited

- Adams, J. E., and W. E. Martin. 1963. Life cycle of *Himasthla rhigedana* Dietz, 1909 (Trematoda: Echinostomatidae). Transactions of the American Microscopical Society. 82:1–6.
- Bush, A. O. 1990. Helminth communities in avian hosts: determinants of pattern. Pages 197–232 in G. Esch, A. Bush and J. Aho (eds.). Parasite Communities: Patterns and Processes. Chapman and Hall, New York.
- Dietz, E. 1910. Die Echinostomiden der Vögel. Zoologische Jahrbuecher Abteilung 12(supplement): 265–512.
- Russell, H. T. 1960. Trematodes from shorebirds collected at Marro Bay, California. Ph.D. Thesis, University of California, Los Angeles.
- Stunkard, H. C. 1960. Further studies on the trematode genus *Himasthla* with descriptions of *H. mcintoshi* n. sp., *H. piscicola* n. sp., and stages in the life history of *H. compacta* n. sp. Biological Bulletin 119:529–549.